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## TORREYA

October, 1904

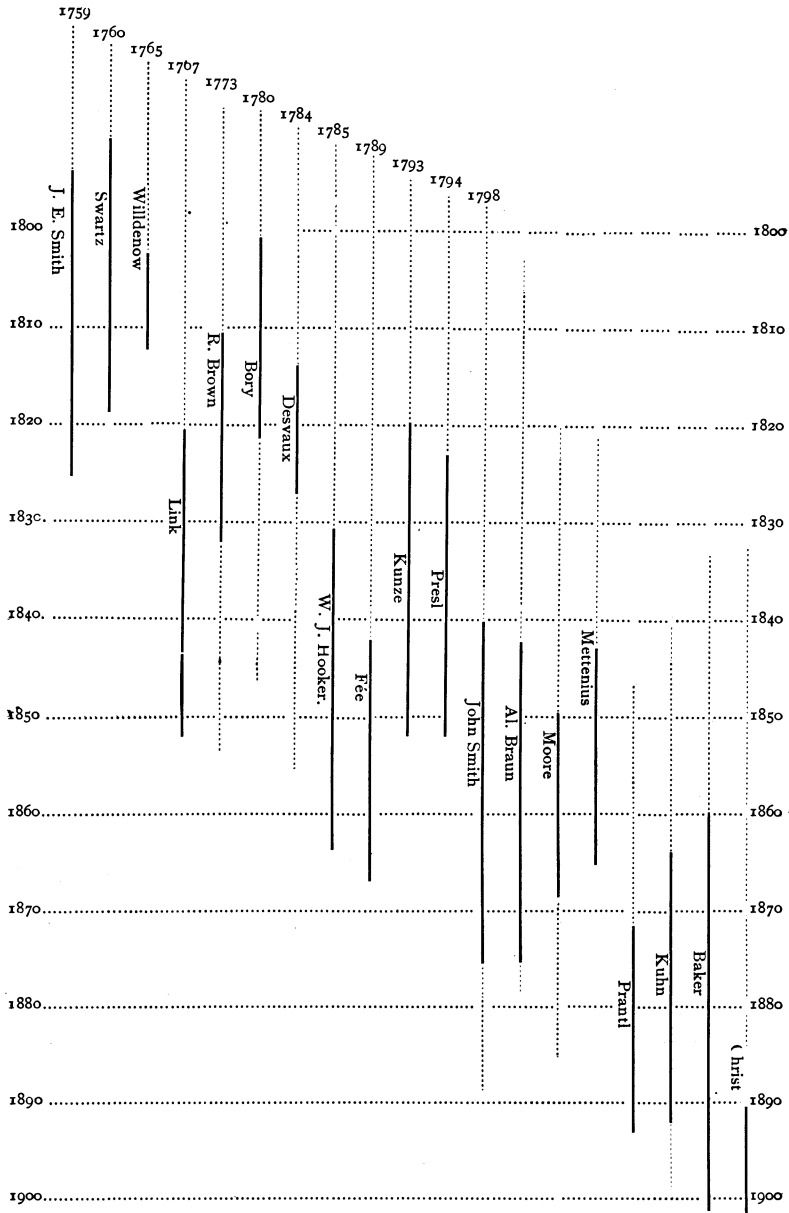
THE EARLY WRITERS ON FERNS AND THEIR  
COLLECTIONS—III. W. J. HOOKER, 1785–1865

BY L. M. UNDERWOOD

Following the period of J. E. Smith, Swartz, and Willdenow, and partly contemporaneous with it, were two or three men of minor rank in systematic fern study and yet men who did real and lasting work, both in extending the genera of ferns and in describing unknown species. Among these was the distinguished keeper of the botanical department of the British Museum, Robert Brown (1773–1858) whose keen understanding of generic relations among ferns will ever cause us to lament that his publications on the fern system were so limited and incomplete. Bory de St. Vincent (1780–1846) also published a number of fern genera as did also Link, of Berlin (1767–1851). But in the extent of published work, all of these were surpassed by Desvaux (1784–1856) professor of botany at Angers, whose synopsis (1827), the forerunner of modern generic limitations, is one of the too-often neglected but valuable works of the fern systematist of to-day. Desvaux's diagnoses are unfortunately too brief, and his types are often difficult to trace in the Museum of the Jardin des Plantes, but his views were usually rational and as the time goes on his species will be found to compare favorably with those established by others of this period.

In order better to orient the reader with regard to the various periods of systematic fern study we append the following chronological table :

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(In the above table the entire line shows the life period, the solid line the period of publication on ferns.)

It is to England, however, that we must look for the greatest advance in the systematic study of ferns during the second quarter of the past century. W. J. Hooker, afterwards Sir William, the first director of Kew Gardens after Queen Victoria had opened them to the public, and father of the present Sir Joseph, who followed his father in that important post in 1865, was born in 1785 and thus was a correspondent in touch with all the earlier writers on ferns of the first years of the century.

In his earlier years of study, Hooker was associated with R. K. Greville, the distinguished cryptogamic botanist of Scotland, and with him published the elaborate folio in two volumes, *Icones Filicum* (1831), besides one or two preliminary papers on ferns and fern allies.\* Greville's influence was most salutary in giving to their combined studies what would now be considered a more rational view of the limitation and distribution of species, and thus contrasts most strongly with the narrowly conservative ideas that dominated all the later writings of Sir William and his successors in fern study at Kew. A comparison of a few genera will strongly emphasize this statement.

Genera	Species recognized by Hooker & Greville in 1833	Species included in the first edition of <i>Synopsis Filicum</i> , 1868	Species of the <i>Synopsis</i> published subsequently to 1833
OPHIOGLOSSUM.	18	10	2
BOTRYCHIUM.	14	6	—
MARATTIA.	10	7	3
DANÆA.	5	11	6
ANGIOPTERIS.	2	1	—
OSMUNDA.	12	6	—
TODEA.	3	4	2

The appointment of Hooker to Kew made possible several opportunities which served to advance our knowledge of ferns and to lay the foundations at that herbarium of its present magnificent collection of ferns :

1. The increased exploration of distant lands made possible by the relation Kew has increasingly maintained towards commercial importation of ornamental plants and more especially by

\* Greville & Hooker. *Enumeratio Filicum* (I. Lycopodineae). Bot. Miscellany, 2: 360-403. 1831; (II. Ophioglosseae, Marattiaceae, Osmundaceae). Bot. Miscellany, 3: 216-232. 1833. This work was unfortunately discontinued.

the intimate relations early established with the extensive system of colonial gardens and plantations which have ended in these adjuncts being almost wholly manned by men who were trained at Kew.

2. The increased facilities for the publication of extensive series of excellent illustrations of ferns. In this Hooker was greatly aided by the painter, Francis Bauer, to whom we are indebted for the admirable illustrations in *Genera Filicum*, and later by Mr. W. Fitch, for many years the artist of Kew Gardens.

3. By the selection of John Smith in 1841 as the curator of Kew Gardens, whose interest in fern cultivation resulted not only in bringing together the splendid collection of living ferns now in cultivation at that garden, but early laid the foundation of an elaborate generic system of ferns far more philosophical and rational than that followed by Hooker and his successors.

Whatever may be said in criticism of the conservative treatment of fern species or fern genera at Kew, no words can sufficiently convey the appreciation of fern students of every subsequent age for the elaborate and accurate illustrations, the magnificent fern herbarium, and the splendid collection of living ferns which have ever been available for study with a characteristic and open-hearted generosity that could not be exceeded.

Hooker's illustrated publications on ferns were as follows :

1. *Icones Filicum* (conjointly with Greville) 2 vols. 1831. 240 plates (hand-colored in some copies, not in others).

2. *Genera Filicum* (conjointly with Bauer). 1842. 120 colored plates.

3. *Species Filicum*. 1844-1864. 5 volumes of text and 304 plates (uncolored).

4. Garden Ferns. 1852. 64 colored plates.

5. A Century of Ferns. 1854. 100 colored plates. (This was a reissue of volume ten of *Icones Plantarum*, in which the plates were differently numbered and were uncolored).

6. *Filices Exoticae*. 1859. 100 colored plates.

7. A Second Century of Ferns. 1861. 100 colored plates.

8. British Ferns. 1861. 66 colored plates.

Besides the above there were numerous plates of ferns scat-

tered through various volumes of *Icones Plantarum*,\* which brings the above total of 1074 plates up to over 1200. As the plates of *Genera Filicum* and *Species Filicum* often contain two or more species, the total number of ferns illustrated from Kew reaches nearly sixteen hundred species.

The Kew herbarium of ferns is by far the largest collection in the world and it is no disparagement to the other great collections to say that no extensive critical systematic work, whether dealing with the ferns of any genus or of any country, can be reasonably complete without consultation of this famous collection. Some of our distinguished German friends are respectfully urged to take the full import of this statement to heart. There is no excuse for continental botanists longer to neglect this obvious duty.

The same criticism here made on continental botanists of the present generation could have applied with equal force to Hooker himself. Notwithstanding his wide correspondence with botanists of his time, there was obvious failure to examine the types of his predecessors in fern study, and justice forces us to add an equal failure to recognize as valid too much of the work of many of his contemporaries. Cases are not wanting, even, where errors could have been easily avoided by taking the trouble to consult types no farther removed from Kew than the rooms of the Linnaean Society in London, and many of the species of Hooker's contemporaries were either discredited without being seen, or entirely passed over in silence. In the cases of Fée, Presl, and Kunze, this was specially pronounced.

Hooker's work ended in 1865 while he was bringing through the press the hand manual of "all known ferns" under the name of *Synopsis Filicum*, which was completed and brought through a second edition by his successor in the fern herbarium. In this work the extreme of conservatism is reached and its nearly three thousand species will expand to over four thousand before even the ferns of the great Kew herbarium of that date are fully enumerated, to say nothing of the two thousand that have been

\* Volume 17 of *Icones Plantarum*, published however subsequently to Hooker's death, was devoted entirely to ferns.

since described and the many that were overlooked by the authors of *Synopsis Filicum*.

COLUMBIA UNIVERSITY, October 5, 1904.

## A NEW SPECIES OF POLYPORUS FROM TENNESSEE

BY WILLIAM A. MURRILL.

Among the many interesting things found in the partially explored regions of Virginia and Tennessee during the past summer was a little undescribed species of true *Polyporus*, as the genus is at present limited. Considering the work already done in this group and the ease with which these plants as a group may be recognized, I was quite surprised at the find. It indicates the unfinished work at our very doors even in comparatively well-known genera of fungi and shows how much there is yet to be done by earnest collectors in almost any locality.

The genus *Polyporus* as at present limited comprises for the most part, small, central-stemmed plants found in the woods on fallen sticks and logs. Of the twenty-three North American species (Bulletin Torrey Club, 31: 29. 1904), eight are known from Cuba only, one from Porto Rico, one from St. Kitts, two from Central America and one from various parts of Tropical America. This leaves only ten species to be met with in the United States; and only half of these, *i. e.*, *P. Polyporus*, *P. arcularius*, *P. elegans*, *P. fissus* and *P. caudicinus*, are to any extent common, the remaining five being extremely rare and local. Of these local species, Louisiana has one, Alabama one, Ohio one, South Carolina one and North Carolina one; and one is now known from Tennessee.

When I first saw this new plant in the rocky woods at Unaka Springs in East Tennessee, the resemblance to a little gray *Clitocybe* common in the same mountains was so striking that I came near passing it by; but upon closer examination it revealed the large pores, umbilicate pileus and hairy margin characteristic of the